04-120 ATTACHMENT I

ENGINEERED PRECAST CONCRETE CULVERT DRAWING
TXDOT SCP-5

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

ACC:

LEVELS DISPLAYED

1

BOX DATA

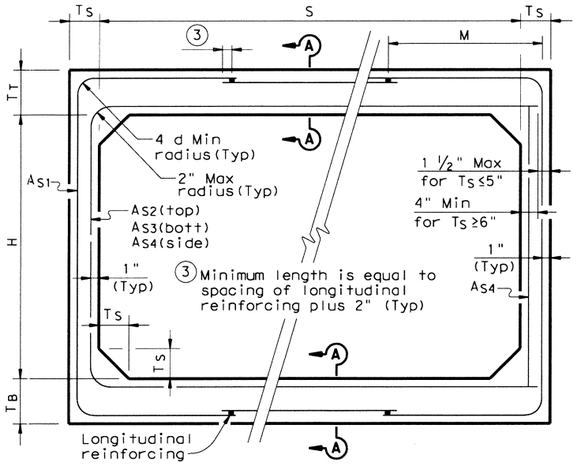
SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (in^2/ft) ②								① Lift Weight (Tons)	Governing ASTM Standard
S (ft)	H (ft)	T_T (in)	T_B (in)	T_S (in)	(ft)	(in)	A_{S1}	A_{S2}	A_{S3}	A_{S4}	A_{S7}	A_{S8}	A_{S5}	A_{S6}		
5	3	8	7	6	< 2	-	0.22	0.41	0.22	0.14	0.19	0.17	0.19	0.19	6.6	C 850
5	3	6	6	6	2	23	0.26	0.28	0.23	0.14	-	-	-	-	5.7	C 789
5	3	6	6	6	3	21	0.17	0.18	0.18	0.14	-	-	-	-	5.7	C 789
5	3	6	6	6	4	21	0.14	0.15	0.15	0.14	-	-	-	-	5.7	C 789
5	3	6	6	6	5	20	0.14	0.14	0.15	0.14	-	-	-	-	5.7	C 789
5	3	6	6	6	6	20	0.14	0.15	0.15	0.14	-	-	-	-	5.7	C 789
5	3	6	6	6	8	20	0.14	0.16	0.16	0.14	-	-	-	-	5.7	C 789
5	3	6	6	6	10	20	0.15	0.18	0.19	0.14	-	-	-	-	5.7	C 789
5	3	6	6	6	12	20	0.17	0.20	0.21	0.14	-	-	-	-	5.7	C 789
5	3	6	6	6	14	20	0.19	0.23	0.23	0.14	-	-	-	-	5.7	C 789
5	3	6	6	6	16	19	0.21	0.26	0.26	0.14	-	-	-	-	5.7	C 789
5	3	6	6	6	18	19	0.23	0.28	0.29	0.14	-	-	-	-	5.7	C 789
5	4	8	7	6	< 2	-	0.19	0.44	0.24	0.14	0.19	0.17	0.21	0.19	7.2	C 850
5	4	6	6	6	2	28	0.23	0.32	0.27	0.14	-	-	-	-	6.3	C 789
5	4	6	6	6	3	23	0.15	0.20	0.21	0.14	-	-	-	-	6.3	C 789
5	4	6	6	6	6	22	0.14	0.16	0.17	0.14	-	-	-	-	6.3	C 789
5	4	6	6	6	8	20	0.14	0.17	0.18	0.14	-	-	-	-	6.3	C 789
5	4	6	6	6	10	20	0.14	0.20	0.21	0.14	-	-	-	-	6.3	C 789
5	4	6	6	6	12	20	0.14	0.22	0.23	0.14	-	-	-	-	6.3	C 789
5	4	6	6	6	14	20	0.16	0.25	0.26	0.14	-	-	-	-	6.3	C 789
5	4	6	6	6	16	19	0.18	0.28	0.29	0.14	-	-	-	-	6.3	C 789
5	4	6	6	6	18	19	0.20	0.31	0.31	0.14	-	-	-	-	6.3	C 789
5	5	8	7	6	< 2	-	0.16	0.46	0.26	0.14	0.19	0.17	0.22	0.19	7.8	C 850
5	5	6	6	6	2	41	0.20	0.35	0.29	0.14	-	-	-	-	6.9	C 789
5	5	6	6	6	3	29	0.14	0.22	0.23	0.14	-	-	-	-	6.9	C 789
5	5	6	6	6	4	25	0.14	0.18	0.19	0.14	-	-	-	-	6.9	C 789
5	5	6	6	6	5	24	0.14	0.17	0.18	0.14	-	-	-	-	6.9	C 789
5	5	6	6	6	6	22	0.14	0.17	0.18	0.14	-	-	-	-	6.9	C 789
5	5	6	6	6	8	22	0.14	0.18	0.19	0.14	-	-	-	-	6.9	C 789
5	5	6	6	6	10	21	0.14	0.21	0.22	0.14	-	-	-	-	6.9	C 789
5	5	6	6	6	12	21	0.14	0.23	0.24	0.14	-	-	-	-	6.9	C 789
5	5	6	6	6	14	21	0.14	0.26	0.27	0.14	-	-	-	-	6.9	C 789
5	5	6	6	6	16	21	0.16	0.29	0.30	0.14	-	-	-	-	6.9	C 789
5	5	6	6	6	18	20	0.17	0.32	0.33	0.14	-	-	-	-	6.9	C 789
5	2	8	7	6	< 2	-	0.24	0.33	0.25	0.14	0.19	0.17	0.19	0.19	6.0	C 850
5	2	6	6	6	18	23	0.27	0.19	0.19	0.14	-	-	-	-	5.1	C 789

⑤

① For Box Length = 8'-0"

② A_{S1} thru A_{S4}, A_{S7} and A_{S8} are minimum required areas of reinforcement per linear foot of box length. A_{S6} and A_{S5} are minimum required areas of reinforcement per linear foot of box width.

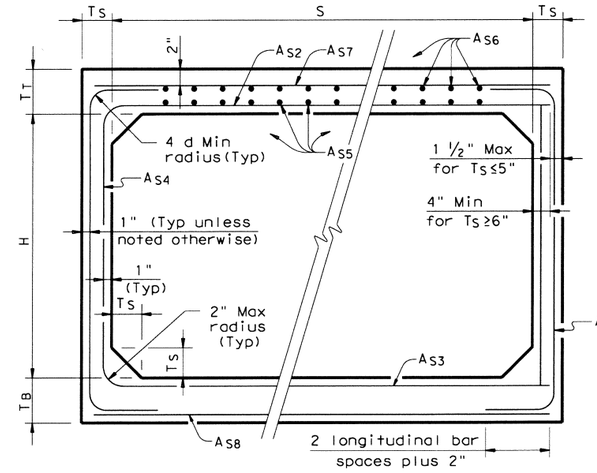
⑤ These designs were created by TxDOT and are not shown in the ASTM Specifications.



C789 CORNER OPTION "A"

C789 CORNER OPTION "B"

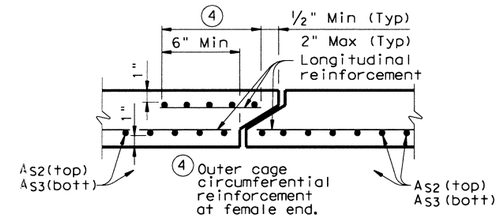
ASTM C789 STANDARD



C850 CORNER OPTION "A"

C850 CORNER OPTION "B"

ASTM C850 STANDARD



SECTION A-A

(TOP AND BOTTOM SLAB JOINT REINFORCEMENT)

GENERAL NOTES:

Designs shown conform to ASTM C789 or ASTM C850. Refer to ASTM C789 or ASTM C850 for information or details not shown.

For ASTM C789 designs, all reinforcing steel shall have a minimum specified yield stress of 65 ksi.

For ASTM C850 designs, all reinforcing steel shall have a minimum specified yield stress of 60 ksi.

All concrete shall be Class "H" Concrete with a minimum compressive strength of 5,000 psi.

See SCP-MD standard sheet for miscellaneous details and notes not shown.

Designed to the maximum fill height shown.

In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Shop plans for alternate designs shall be submitted in accordance with Item "Precast Concrete Structures".

HS20 LOADING

Texas Department of Transportation
Bridge Division

SINGLE BOX CULVERTS PRECAST
5'-0" SPAN

SCP-5

FILE: scp05ste.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT	CK: GAF
©TxDOT December 2003	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS				
	COUNTY	CONTROL	SECT	JOB	HIGHWAY

04-120 ATTACHMENT II

ENGINEERED PRECAST CONCRETE MANHOLE

ALL CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4500 psi.

REINFORCING STEEL SHALL COMPLY WITH ASTM A615 GRADE 60, A706 GRADE 60 OR A497 GRADE 70. BAR BENDING AND PLACEMENT SHALL COMPLY WITH THE LATEST ACI STANDARDS

STANDARD STRUCTURAL DESIGN IS BASED ON AASHTO HS 20 WHEEL LOADING

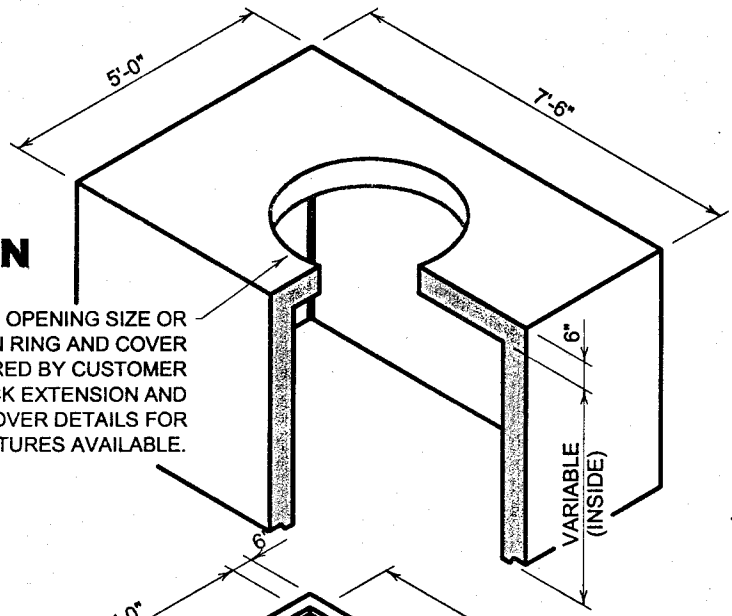
WATER TABLE IS AT 3'-0" BELOW GRADE FOR STANDARD STRUCTURAL DESIGN

THE STANDARD DESIGN IS BASED ON THE TOP AT ANY ELEVATION BETWEEN FINISHED GRADE AND 5'-0" BELOW GRADE.

THE STRUCTURE SHALL BE PLACED ON A COMPACTED GRANULAR BASE TO INSURE UNIFORM DISTRIBUTION OF SOIL PRESSURES.

KNOCKOUTS, OR PIPE OPENINGS TO BE PROVIDED IN THE SIZE AND LOCATIONS REQUIRED.

TOP SECTION



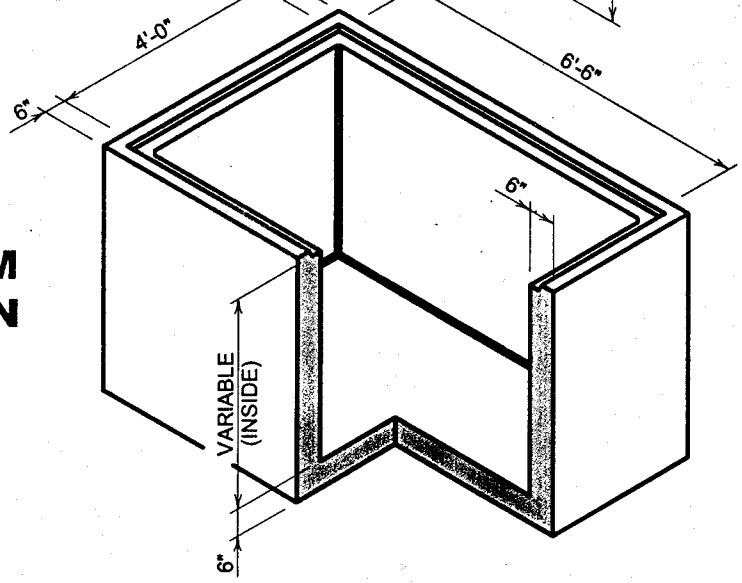
PERSONNEL OPENING SIZE OR CAST IN RING AND COVER AS REQUIRED BY CUSTOMER SEE NECK EXTENSION AND COVER DETAILS FOR FEATURES AVAILABLE.

APPROXIMATE TOP OR BOTTOM WEIGHTS

3'-0" INSIDE 8000 LBS.
3'-6" INSIDE 8900 LBS.

MINIMUM EXCAVATION
7'-0"x9'-6"

BOTTOM SECTION



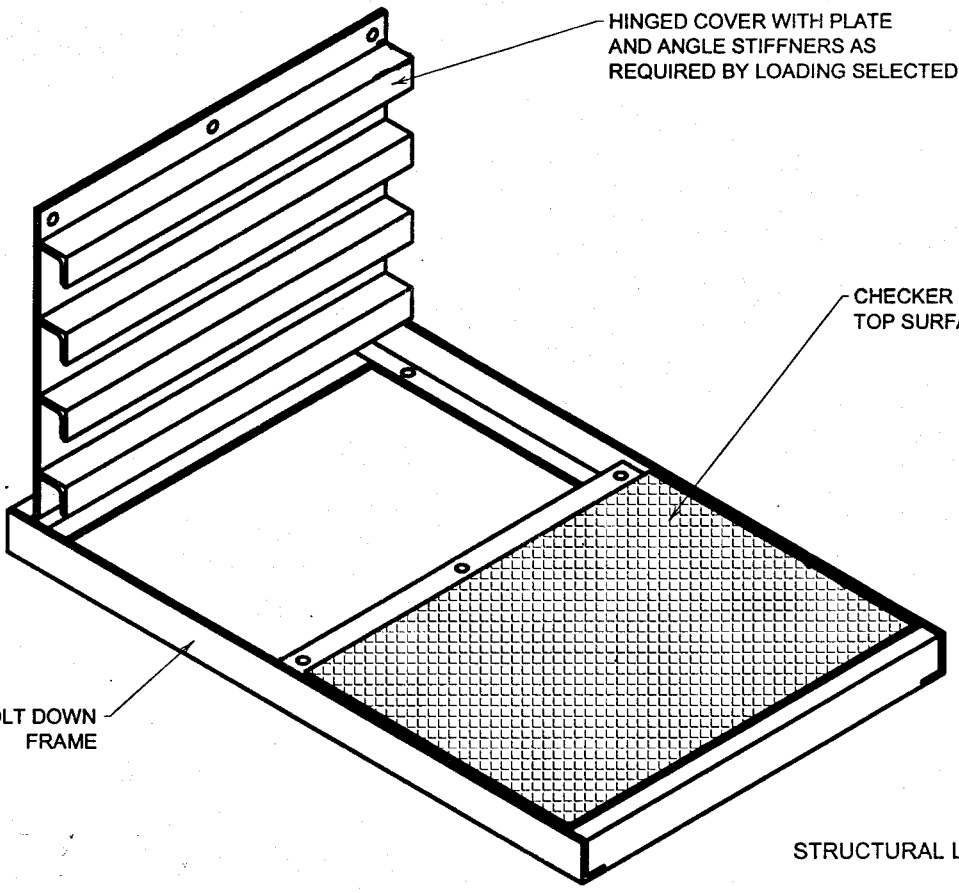
4'-0"x6'-6" 2-PIECE MANHOLE

04-120 ATTACHMENT III

ENGINEERED PRECAST CONCRETE MANHOLE
BOLT-DOWN COVER

ALL FABRICATED STEEL SHALL BE
ASTM A36 Fy = 36000 psi

SIZE (CLEAR OPENING)	OVERALL DIMINSIONS	DOOR CONFIGURATION
36" X 60"	41" X 65"	Double Leaf



STRUCTURAL LOADINGS

AASHTO H20 WHEEL LOAD

TORSION HINGES
DROP HANDLES
PADLOCK HASPS
GALVANIZED FINISH

BOLT DOWN FRAME AND COVER